V. REMARKS

Claims 1 3 and 7 are rejected under 35 U.S.C. 103(a) as unpatentable over Takahashi et al. (U.S. patent No. 3,814,946) in view of Arndt et al. (U.S. Patent No. 5,949,550). The rejection is respectfully traversed.

Takahashi teaches a method of detecting defects in transparent and semitransparent bodies. A first collimated light beam is directed onto a first surface of a transparent member in a spaced relationship to the first surface so that the first collimated light beam passes through the transparent member. A second collimated light beam is directed onto an opposite second surface of the transparent member in a spaced relationship to the first surface so that the second collimated light beam reflects off the second surface of the transparent member. A photodetector is positioned in a region of the second surface outside a region of the first and second collimated light beams passing through a non-defective portion and reflecting off a non-defective surface, respectively, of the transparent member and inside a region of the first and second collimated light beams passing through a defective portion and reflecting off a defective surface of the transparent member. A total amount of light received by the photodetector is measured whereby defects in the second surface of the transparent member and internal defects in the transparent member are detected.

Arndt teaches a method and apparatus for detecting defects in a moving web. A sensor is provided near an edge of the moving web for sensing gloss on the surface thereof. A signaling device provides a signal for a web defect. The web is sensed with the sensor device for detecting patches of relatively high gloss on the surface of the web. The signaling device is activated to signal a web defect upon detection of a patch of relatively high gloss.

Claim 1 is directed to a sheet-material foreign-matter detecting method for detecting whether or not a foreign matter light-reflecting surface of foreign matter is different in reflectance from a light-reflecting surface of a sheet material having light reflectivity with the foreign matter being attached to the light-reflecting surface of the sheet material while moving the sheet material in a predetermined direction. Claim 1 recites the steps of:

applying light to a predetermined position on the light-reflecting surface of a moving route of the sheet material from a position having a predetermined angle from the light-reflecting surface of the sheet material;

picking up as a virtual image of a light source a light-source image reflected from the light-reflecting surface of the sheet material by image-pickup means; and

judging a difference between brightnesses of the light-source reflected image due to a difference between reflectances of the light-reflecting surface of the sheet material and the foreign matter light-reflecting surface, wherein a light-source image reflected at a position shifted by a predetermined distance along the light-reflecting surface of the sheet material from a reflection position of the light extending along an optical axis of the light source is picked up.

It is respectfully submitted that none of the applied art, alone or in combination, teaches or suggests the features of claim 1. Specifically, it is respectfully submitted that none of the applied art, alone or in combination, teaches or suggests applying light to a predetermined position on the light-reflecting surface of a moving route of the sheet material, picking up as a virtual image of a light source a light-source image reflected from the light-reflecting surface of the sheet material and judging a difference between brightnesses of the light-source reflected image due to a difference between reflectances of the light-reflecting surface of the sheet material and the foreign matter light-reflecting surface. Thus, it is respectfully submitted that one of ordinary skill in the art would not be motivated to combine the features of the applied art because such combination would not result in the claimed invention. As a result, it is respectfully submitted that claim 1 is allowable over the applied art.

Claim 3 is directed to a sheet-material foreign-matter detecting apparatus for detecting whether a foreign matter light-reflecting surface of foreign matter is different in reflectance from a light-reflecting surface of a sheet material having light reflectivity with the foreign matter being attached to a light-reflecting surface of the sheet material while moving the sheet material in a predetermined direction. Claim 3 recites that the sheet-material foreign-matter detecting apparatus includes a light source, image pickup means and judging means. Claim 3 recites that the light

source applies light to a predetermined position on the light-reflecting surface of a moving route of the sheet material from a position having a predetermined angle from the light-reflecting surface of the sheet material. Claim 3 also recites that the image pickup means picks up as a virtual image of a light source a light-source image reflected from the light-reflecting surface of the sheet material. Claim 3 for the recites that the judging means judges a difference between brightnesses of a light-source reflected image due to a difference between reflectances of the light-reflecting surface of the sheet material and the foreign matter light-reflecting surface. Also, claim 3 recites that a pickup position of a light-source reflected image on the light-reflecting surface of the sheet material is shifted by a predetermined distance along the light-reflecting surface of the sheet material from a reflection position of the light extending along the optical axis of the light source.

It is respectfully submitted that none of the applied art, alone or in combination, teaches or suggests the features of claim 3. Specifically, it is respectfully submitted that none of the applied art, alone or in combination, teaches or suggests judging means that judges a difference between brightnesses of a light-source reflected image due to a difference between reflectances of a light-reflecting surface of the sheet material and a foreign matter light-reflecting surface of foreign matter attached to the light-reflecting surface of the sheet material. As a result, it is respectfully submitted that claim 3 is allowable over the applied art.

Claim 7 is canceled and therefore the rejection as applied thereto is now moot.

Withdrawal of the rejection is respectfully requested.

In view of the foregoing, reconsideration of the application and allowance of the pending claims are respectfully requested. Should the Examiner believe anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' representative at the telephone number listed below.

Should additional fees be necessary in connection with the filing of this paper or if a Petition for Extension of Time is required for timely acceptance of the same, the Commissioner is hereby authorized to charge Deposit Account No. 18-0013 for any such fees and Applicant(s) hereby petition for such extension of time.

Respectfully submitted,

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